

Pilot Team Findings and Implementation Challenges 2010-2011

In the spring of 2010, twelve districts took the opportunity to participate in pilot projects through the Western New York Regional Information Center and their local BOCES Model Schools programs. Those twelve districts included Scio, Hamburg, Lakeshore, West Seneca, Iroquois, Tonawanda, Starpoint, Lancaster, Akron, Depew, Genesee Valley, and Franklinville. The pilot team, consisting of coordinators from the WNYRIC and local BOCES Model Schools programs, was able to work with various grade levels ranging from second grade through twelfth grade. By using a variety of data collection tools including surveys, interviews, observations, and a focus group meeting the pilot team not only collected information about the integration of these technologies into the curriculum but also triangulated the data for a more thorough analysis. The team worked in the classroom with teachers and students to help districts determine if incorporating different technologies would enhance teaching and learning.

During the 2009-2010 school year, districts had the opportunity to pilot the integration of several different devices and/or types of software. These devices included iPod touches, netbooks, and Sony eReaders while the software included Quest Atlantis, Google Apps and Richer Picture™. All of the equipment remained in the classroom throughout the pilot period. None of the equipment was allowed to travel home with teachers or students. Teachers met with BOCES staff developers, prior to the pilot, in order to determine and plan the projects (Appendix A) that would take place over the four week long period. BOCES staff were on hand to assist with the introduction of the devices, surveying the class and coaching the teachers while implementing the projects. The process of integration was modified based on the teacher's comfort level with the use of the technology in their classroom. The design of integration was scaffolded by the team depending on the teacher's readiness for the use of the technology. In some cases this meant that the team would teach while the teachers' became more at ease with the technology while others were comfortable enough to immediately team teach with the BOCES staff. Each teacher was provided a daily outline of what could be done in the classroom throughout the pilot (Appendix B). In most cases, the devices were not used everyday in the classroom.

Results

Student beliefs about technology

Students took both pre and post surveys (Appendix C) to gauge their feelings and beliefs around technology and the subject area in which the technology was being piloted. Overall students felt that technology was important to very important (4.25) in their everyday life (important (4) very important (5)). When questioned about how often they used technology in their school/classroom they indicated occasionally (2.9). This data supports the idea that students must often "power down" prior to arriving at school. They are not given significant opportunities to utilize technology in their daily activities. Comments consistently indicated that students wanted more time utilizing a technology

device so that they could effectively complete their work. Many students recognized that the use of the device would enhance their learning process, as one 12th grade student wrote, “I like the netbook. I would like more school time to make this better (project) and I need to learn more ways to cite sources and find diverse information.” In observing the classroom, the team found that the students were able to work at their own pace while completing their projects. This observation is summarized well by an 8th grade students’ comment, “I liked how we got to do everything at our own speed but still the same activity.” When students were asked how they learned about technology the answer that came up the least was school. Most students indicated that they learned about technology from the Internet, their family, friends, or on their own.

Student beliefs about the subject area

Students were asked their feelings in regards to the subject area in which we were piloting the technology. The data shows that overall students felt OK or pretty good (3.64) about the different subject areas we were piloting the technology in. These subject areas were not their favorite, but also they “did not dread coming to class”. While working on the netbooks or iPod touches students went above and beyond often adding pieces to the projects that were not required. In almost every class we visited teachers expressed surprise that students who may not have worked to their potential previously or who had not completed assignments were engaged and working to the best of their ability while being involved in the pilot. One 2nd grade teacher clearly states this in her post survey comments, “I saw kids who could not add mentally or who did not know their basic facts learn how to count money by using appropriate apps and enjoy doing it. My reluctant readers eagerly read a book on the iPod and tediously typed in responses to challenging comprehension questions.” Through observation of the classroom and informal comments the team found that teachers saw fewer behavior issues while students were utilizing the technology to complete their assignments. The team observed an increase in teachers interacting individually with students as they worked on their projects. Students also saw and were impacted by the change in teacher approach during technology use. One 9th grade student commented on this in his/her survey, “The teacher interacts individually now with the students, which is very beneficial and the students now ask more questions when working.”

Summary of the projects and teaching

Teachers used various pre assessment tools before each project, which included KWL charts, wall wisher (<http://www.wallwisher.com/wall/lakeerie>), and other graphic organizing techniques. Teachers used rubrics, created for each project, to assess the learning that had taken place. The pilot team often encouraged embedding student choice and 21st century skills during the discussion of instructional design with the teacher. This resulted in many instances with students researching their own choice of topic for a project and then presenting their information to the class utilizing a program (i.e. comic strip light, evernote, or doodle buddy) or website (i.e glogster or wikispaces). According to grade reporting and teacher comments, overall the students performed average to above average on the project assignments. For most projects, teachers noted that many

students went above and beyond what was asked for in the rubric for the assignment. In one project, for example, students were required to complete a digital storytelling project about The Holocaust using a minimum of 4 sections in a “comic strip” layout. Several students created more sections or whole new strips to complete telling their story.

Students were motivated and engaged throughout the projects and were able to work at their own pace. The teachers were also more engaged in the projects and the support of the student work and learning in these projects. One fifth grade teacher said it best, “I learned that any and every child can learn using technology. It is what motivates every one of them and it is what their generation has grown up with, seeming almost instinctive for them. Any time and effort that the teacher puts in so that students can use technology returns in almost guaranteed results.” The team saw a variety of problem solving skills develop in use of the devices and ownership of the broader classroom environment. For example, when students understood that the touches had to sync in order to print, they began to gauge when they were close to finishing and would stand in the print line to finish their project while waiting in line. This ownership over their own time and learning allowed them to make the most of the class period and print their finished product quickly.

Students were very responsible and took great care of the devices assigned to them (iPods, eReaders & netbooks). There were no lost devices and no one intentionally damaged them. There was one accident where a netbook fell off a desk and a portion of the keyboard cracked. The student told the teacher immediately and the device was no longer used during the pilot. The devices were filtered using the school filter, which gave students the same experience as they would have had while surfing the web on the library computer. Many commented that they enjoyed learning using a different method than simply paper and pencil or textbooks. The students themselves observed differences in the classroom. They commented that the classroom and lessons:

1. Involved more students: “My teacher actually used the computer to teach us something instead of having us take notes. All of my classmates got involved.” - 9th grade student
2. Was an engaging shift from more traditional methods “Computers and other technology are way more fun than paper and pencils. It’s a nice break since all our other classes are very notes and essay based.” - 10th grade student
3. Provided access to a larger set of resources for greater levels of learning than a textbook “I have learned a lot of things to do on the iPods and I’m really glad we got to do something different than just write in our math books.” - 2nd grade student
4. Tapped into student interest “I learned a lot more than I usually do in social studies. I think I learned more because I am interested in using the iTouches instead of just the book work.” - 8th grade student

5. Addressed different learning styles “We should work with different technology because we can’t just be doing the same thing over and over again every single day.” - 3rd grade student

Teachers saw the change in students’ performance and engagement through the pilots. The impact of the pilots will last beyond the experience since many teachers have changed their instructional approach. One 3rd grade teacher committed to this change by saying “Some of the Social Studies and ELA projects that I have traditionally done as paper/pencil projects will now be done with the netbooks.”

Lessons Learned

There were multiple challenges and implementation decisions that the team faced while working in the pilot districts. Many of these challenges have a simple solution when addressed prior to implementation. Through this process there were improvements in instructional design as well as opportunities to examine best practices in the implementation of hardware and software, which made the technology more usable in the classroom environment.

iPod Touches & iPads:

- iTunes
 - iTunes must be accessible or the iPods cannot sync or charge
 - Districts disable the USB ports on school computers. If that is the case, the Touches cannot charge or sync.
 - Unless districts utilize the built in organizational piece in iTunes the iPod touches sync apps in alphabetical order.
 - Management of a set of iPod Touches has to be thoughtfully deployed
 - One computer should be designated, as the iPod touch “master” computer and this must be backed up.
 - The iTunes account is specific to that computer.
 - Districts must also have a master iPod touch who’s backup can be used to restore other iPods.
- Charging & Syncing
 - WNYRIC has purchased several seven port powered USB hubs which allow easier charging and syncing.
 - Districts can purchase charging cases from various manufacturers. These cases allow for syncing, charging and storage as well. Cases do not sync in a hands off, round robin way – you must touch each device in order to sync.
 - PC’s have a limit as to how many iPod touches you can sync at one time.
- Printing
 - Students’ work needs to be printed and cannot (at this time) print without using the sync cable.
 - Student work must be emailed or taken off the iPod in order to print.
 - There are printing apps that are becoming available but nothing at this time that would work in the manner we are looking for.

- Student work
 - The device is being used by several students during different periods. If students save work on the iPod Touch, those notes can easily be erased.
 - Some schools have allowed student e-mail, so that students can e-mail their work to themselves.
 - Another solution involves creating an account for each student in Evernote. They would have to sign in and out each period they use the notes function. This also syncs with a webpage so students would be able to sign in and open their notes on other computers to add, modify or create new notes.
 - Students can use the Bump app to pass work to each other or a teacher's iPod
 - Students can take pictures of their work on the device and print the picture.
- Wireless connection
 - Students can either login as guests on the school network or the iPod touches will be placed on the school network (using Mac addresses).
 - Districts need to address the issue of signal strength of existing wireless access points. The district may need to bring an additional wireless access point into the classroom.
 - At times there are so many devices (laptops, iPods, netbooks) searching for access it lowers the bandwidth.
 - Some districts limit the number of devices that can connect to the network. If there is a limit of 50 and 30 laptops are already connecting then the class of 25 students on iPod touches cannot not all connect.
- Apps
 - During the pilot the WNYRIC manages all of the iTunes accounts and apps on each device.
 - Management of iTunes and the decision about which apps are appropriate would be an implementation decision districts would need to discuss before rolling out iPod Touches.
 - There are over 300,000 apps in the app store and growing everyday.
 - There are over 10,000 apps just for the iPad.
 - Volume Purchasing Program should be used to purchase apps.
 - Districts must decide how to manage the purchase of apps.
 - Suggestion – Department head has access to the district iTunes account and each team creates a rubric to determine which apps would be appropriate. Each district maintains a shared document that allows teachers to share the apps that have been purchased for their teams.
- Filtering
 - The iPod touches were on the school network, and therefore, were filtered by the school filter.
 - During the pilot the devices are not taken home.

- If a district decides to purchase and allow students to take the devices home, the filtering would be a challenge. The WNYRIC team is looking into how this challenge can be solved.
- Ear buds
 - It is not recommended that students share ear buds. Students are encouraged to utilize their own personal ear buds. However, districts can purchase inexpensive ones for use in the classroom.

Netbooks:

Configuration considerations

- Wireless
 - Students can either login as guests on the school network or the Netbooks will be placed on the school network (using Mac addresses).
 - Districts need to address the issue of signal strength of existing wireless access points. The district may need to bring an additional wireless access point into the classroom.
- Students will need a place to save their work. Many districts have drives for each student. Students would need access to save in these drives.
- Printing
 - Districts can allow for networked printing from the netbook.
 - Some districts decided to allow students to save their work on jump drives and print in the library.
- Security
 - Each district worked with the team to decide how to keep the netbooks safe.

Device-specific considerations

- Ports
 - Not all of the netbooks have ports for a projector.
- Battery Life
 - Some of the batteries last longer than others. Districts were usually able to get at least three hours out of the battery.
- Charging
 - Districts would plug them in and charge overnight, but this often involved several power strips.
 - Districts would be able to purchase carts for the netbooks if they decided to buy the devices. These carts would also help to maintain security of the netbooks.
 - Some districts used older laptop carts for charging and security.
 - They were often locked up within the building, or a spare laptop cart was used for security and charging of the netbooks.
- Durability
 - The Dell 2100 series with the rubber covering “stuck” to the desks. The Acer, HP and Asus netbooks do not have this type of covering and easily slide around on or off the desks.

- Touch pads
 - Most middle/high school students were able to use the touch pad without a challenge.
 - Many of the students in the intermediate grades used mice with the netbooks. The district provided a mouse for each student.
- Keyboards
 - Some high school students, especially boys, felt that the keyboard was small.

eReader:

Content considerations

- They SONY devices require a library to be installed on the network in order to be used by more than one teacher.
- Teachers created much of their own material.
- Teachers utilized the following for materials in the public domain:
 - Google Books - <http://books.google.com/>
 - The Gutenberg Project - <http://www.gutenberg.org>
 - Government websites for primary source documents

Device-specific considerations

- Pocket Reader (older version)
 - The pocket reader that we used for the pilots is not a creation device.
 - No 3G wireless
 - No touch screen
 - It didn't create audio of the text for the students.
 - You cannot take notes on the device.
 - You can bookmark, but not highlight.
 - The device must be connected to a computer to download books from the library.
- Charging
 - They will charge when connected to the computer, but would not charge off the hubs.

Looking toward the Future

The pilot team has begun to meet with districts to plan for the 2010-2011 school year. Pilots will begin in September and continue through June. The team is currently accepting districts to be part of the pilot program. Tablets and classroom performance systems will be added to the pilot program this year. There will be additional information on eReader software for various devices that should be available soon (<http://www.blioreader.com/>). Below you will find information about a few of the tablet devices currently or soon to be on the market. The team will be working with 5 iPads for the 2010-2011 school year. As other devices become available and districts have interest we will work with the vendors to provide them as well.

Closing

The information for this pilot has helped to bring one important aspect to the forefront of the discussions with each district: Youth today are significantly impacted by and open to media and technology. This creates a disjunction with more typical lessons in schools as they do not utilize the variety of resources and tools that technology offers. The impact of media and technology on the lives of students was recognized in a recent national survey by the Kaiser Family Foundation (1-20-2010), *Generation M2: Media in the Lives of 8-to 18-Year-Olds*. This survey found that with technology allowing nearly 24-hour media access as children go about their daily lives, the amount of time young people spend with entertainment media has risen dramatically, especially among minority youth. Today, 8-18 year-olds dedicate an average of 7 hours and 38 minutes to using entertainment media across a typical day (more than 53 hours a week). And because they spend so much of that time 'media multitasking' (using more than one medium at a time), they actually manage to pack a total of 10 hours and 45 minutes worth of media content into those 7½ hours. More information about this survey can be found at the link below.

<http://www.kff.org/entmedia/mh012010pkg.cfm>

If you are interested in becoming a pilot district please contact Michelle Okal at (716) 821-7200 or e-mail her at mokal@e1b.org. There are still slots available for the 2010-2011 school year. The pilot team is looking forward to assisting other districts in helping them to determine the best avenue for technology integration within their classrooms.